

NON-PUBLIC?: N
ACCESSION #: 9109050153
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Indian Point Unit No. 2 PAGE: 1 OF 04

DOCKET NUMBER: 05000247

TITLE: Reactor Trip due to RPS Over Temperature Delta Temperature
EVENT DATE: 07/25/91 LER #: 91-013-00 REPORT DATE: 08/26/91

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: N POWER LEVEL: 090

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Michael Whitney, Senior Engineer TELEPHONE: (914) 526-5131

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On July 25, 1991 at 1556, with the unit operating at approximately 90% power and Reactor Protection System channel calibrations in progress, the reactor tripped. The trip was generated by the reactor protection system two out of four coincidence logic for Over Temperature Delta Temperature. The operators responded to the event in accordance with established plant procedures and plant systems responded as designed.

Following the review of the events by the Station Nuclear Safety Committee a reactor restart was initiated with the generator breakers closed on the grid on July 26, 1991 at approximately 1814. There was no impact on the health and safety of the public.

END OF ABSTRACT

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PLANT AND SYSTEM IDENTIFICATION:

Westinghouse 4-Loop Pressurized Water Reactor

IDENTIFICATION OF OCCURRENCE:

Reactor Protection System (RPS) Over Temperature Delta Temperature (OT Delta T) Logic Actuation initiating a reactor trip.

EVENT DATE:

July 25, 1991

REPORT DUE DATE:

August 26, 1991

REFERENCES:

Significant Occurrence Report (SOR) 91-345
Station Administrative Order No. 132 Event Report No. 91-15

PAST SIMILAR OCCURRENCE:

Abnormal Occurrence Report 50-247/4-2-23 dated August 16, 1974

DESCRIPTION OF OCCURRENCE:

On July 25, 1991 at 1556, with the unit operating at approximately 90% power and with RPS Channel calibrations in progress the reactor tripped. This trip was generated by the RPS two out of four coincidence logic for OT Delta T. One channel (Loop 2) was in the trip mode for the performance of OT Delta T and Over Power Delta Temperature (OP Delta T) surveillance tests. Instrument and Control (I&C) personnel had placed the Loop 2 OT Delta T and OP Delta T bistables in the trip position in accordance with the surveillance procedure. This reduced the trip actuation logic to one of any of the remaining three in-service channels. The test personnel were in the process of verifying the appropriate trip status lamps and channel trip alarms when the reactor tripped. No activity was taking place in any of the associated cabinets which would have led to a trip of any one of the remaining three in-service channels.

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DESCRIPTION OF OCCURRENCE: (continued)

The OT Delta T trip is designed to protect against a departure from nucleate boiling. The reactor coolant loop hot leg and cold leg differential temperature (Delta T) is used as a means of measuring reactor power. The indicated value of Delta T is compared with a setpoint that is automatically varied depending on primary Reactor Coolant System (RCS) Average Temperature, pressurizer pressure, and reactor axial power differential. If the actual Delta T signal exceeds the calculated setpoint, the affected channel will trip.

The plant was shut down in accordance with established procedures and plant systems responded as designed. A review of the events was conducted by the Station Nuclear Safety Committee and a reactor restart was initiated.

ANALYSIS OF OCCURRENCE:

This report is being made since actuation of the RPS occurred. Any manual or automatic actuation of the RPS is reportable under 10 CFR 50.73(a)(2)(iv). There were no adverse safety implications for this event. All systems performed as expected.

CAUSE OF OCCURRENCE:

A review of the Sequence of Events computer printout indicated that the OT Delta T trip signal came in and cleared within a span of 44 milliseconds. A review of activities taking place at the time eliminated physical activities in the cabinets as a cause of the trip. A review of the actual plant conditions eliminated the possibility that the trip signal was due to an actual Delta T trip condition. Therefore, it was determined that a spike in the OT Delta T setpoint channel is the most likely cause of the trip. Similar occurrences are known to have occurred in the industry. The suspect channel could not be determined since the plant computer sequence of events program did not printout any channel deviations. The OP Delta T setpoint signal channel for loops 1, 3, and 4 was monitored by I&C personnel following the trip in an attempt to determine if one channel was at fault, but no deviations or spikes were noted.

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CORRECTIVE ACTION:

Immediately following the reactor trip, the control room operators stabilized the plant in accordance with established procedures. The plant was shut down normally and no significant problems were noted.

A Station Nuclear Safety Committee was held at 1845 that evening to review the trip and its cause. Following the review of the events, the Committee agreed that the most likely cause of the trip was an instrumentation spike and not an actual parameter change. The committee approved reactor startup following the completion of the calibration of the Loop 2 instrumentation and I&C verification that the OT Delta T channels had no abnormal characteristics. These actions were completed.

Prior to plant startup, the trip actuation circuits were checked to ensure that any signal channel trip will actuate the Sequence of Events printout.

ATTACHMENT 1 TO 9109050153 PAGE 1 OF 1

Stephen B. Bram
Vice President

Consolidated Edison Company of New York, Inc.
Indian Point Station
Broadway & Bleakley Avenue
Buchanan, NY 10511
Telephone (914) 737-8116 August 26, 1991

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 91-13-00

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

The attached Licensee Event Report LER 91-13-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,

Attachment

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